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ABSTRACT

A national study of small and large high schools was undertaken in 1984 to collect data regarding the extent of curricular offerings and then to determine whether the differences were statistically significant. Two random samples were used: the first consisted of 475 schools with enrollments of less than 400 and the second was composed of 900 schools with enrollments of over 1,000. Questionnaires mailed to school principals in the two samples included listings of 104 different course offerings arranged in 13 subject areas. Of the 104 courses surveyed, 77 were available to students more frequently in large schools, with 37 of those courses showing a significant difference (e.g., art, business education, foreign languages, industrial education, and mathematics). Only 26 courses were offered at a higher frequency in small schools with 2 showing significant differences (vocational agriculture and animal husbandry). It would appear that most students attending small/rural high schools face curriculum disadvantages uncommon to students who attend larger high schools. A table compares course offerings in the samples including those identified as significantly different. (CHG)

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A STUDY REPORTING SECONDARY COURSE OFFERINGS

In

SMALL AND LARGE HIGH SCHOOLS

Report Prepared for the Rhode Island Department of Education Conference, "Maintaining Program Quality in High School Programs with Small and Declining Enrollments."

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May 23, 1985

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A STUDY REPORTING SECONDARY COURSE OFFERINGS IN SMALL AND LARGE HIGH SCHOOLS

Literature on the relationship between the size of school and extent of curricular offerings is almost unequivocal (Webb and Metha, 1983). Larger schools with greater numbers of students can and do offer more program breadth than their small school counterparts. Not only do larger schools tend to offer more courses in each subject area than do small schools, studies have found they also tend to provide courses in a greater variety of subject areas (Osterndorf and Horn, 1976). Exceptions to this fact seem to be few and are largely restricted to isolated instances where an unusual amount of local wealth supports a low pupil enrollment.

On the whole, administrators in small high schools lack needed resources that would enable them to provide the same variety of classes available to students attending larger schools. In a 1983 study (Barker and Muse), public school superintendents in over 640 small school districts across the United States ranked the need to improve the high school curriculum as second only to school finances as their most prominent concern. The problem is a significant one. Latest figures available at the time of this writing indicated a total of 15,144 operating public senior high schools in the United States (U.S. Bureau of the Census, 1983). Of these, 7329, or 48.4%, enrolled fewer than 500 students.

The purpose of this article is to report research findings from a national study which collected data regarding the extent of specific curricular offerings in both small and large high schools, then determined whether the differences were statistically significant.

Method

Two random samples of operating public high schools in the United States were used in this study. The first consisted of 475 schools with enrollments of less than 500 students each. The second was composed of 900 schools with enrollments in excess of 1000 students each. Mailing lists purchased from Market Data Retrieval Incorporated (1984), indicated a total of 5060 qualifying schools in the first sample (this did not include some 2300 continuation, alternative, speciality, or K-12 single district high schools, almost all of which enroll fewer than 500 students) and 4673 qualifying schools in the second sample. A self-administered questionnaire was mailed during the 1983-84 school year to school principals in each of the two samples. Responses were returned from 319 of the small schools for a return of 67.2 percent and from 350 of the large schools for a return of 38.9 percent. Returns were received across 46 different states for the small schools and 45 different states for the large schools.

The questionnaire included a listing of 104 different courses, arranged in 13 separate subject areas. The list of course offerings was compiled from a review of the course catalogs of a geographical cross-section of school districts in the United States. Although course titles vary, the most common titles with regard to the content were chosen (Newschool, 1982). Principals were asked to indicate which of these courses were offered as a part of the curriculum in their school for the current year.

The Statistical Analysis System (SAS) computer program was used to list the frequencies of those courses which were offered in each sample. Chi square was applied to determine the significance of difference reported between the frequencies for each course offered in the two samples.

Findings

The mean student enrollment in the small schools was 296.8 students and in the large schools was 1598.4 students.

Table 1 presents a frequency listing, which compares by percent the offering of courses in each of the two samples. Also shown are those courses for which statistically significant differences ($p < .05$) were identified in terms of their being offered in either of the samples.

The extent of curricular offerings in the large school sample was clearly more frequent than for the small schools. Of the 104 courses surveyed, 77 (74.0 percent) were available to students more frequently. In addition, 37 of these courses (35.6 percent of total) showed a significant difference. By contrast, only 26 courses were offered at higher frequencies in the small schools. Only two (vocational agriculture and animal husbandry) were significant.

The mean percent increase of course offerings in the large schools over the small schools was 18.4 percent. For the 26 courses offered more frequently in the small schools, the mean percentage increase over the large school sample was only 5.7 percent.

Courses reported at higher frequencies in the large schools for which significant differences occurred included three courses in the Art area (sculpture, printing and graphics, and advanced art; four courses in Business Education (word processing, business law, data processing, and advertising); all of the Foreign Languages (Spanish, French, German, Russian, Latin and English as a second language); two Industrial Education courses (automative mechanics and autobody repair); only one course in Language Arts (drama); four courses in Mathematics (advanced geometry, calculus, probability and statistics, and computer math); two Personal Development courses (aerobics, and

TABLE 1

Comparison of curricular offerings in public high schools with a mean enrollment of 297 students and those with a mean enrollment of 1598 students. Reported by principals, 1984.

Course	Percent Offered Small Schools	Large Schools	Significance
Agriculture			
Vocational Agriculture	64.0	34.0	.05
Animal Husbandry	39.4	14.2	.05
Forestry	15.3	10.6	
Horticulture	38.6	38.8	
Wildlife	12.5	6.8	
Art			
Art Appreciation	53.2	56.2	
Art History	37.0	46.5	
Drawing and Painting	81.4	95.6	
Crafts	70.9	79.5	
Sculpture	47.9	69.5	.05
Printing and Graphics	51.7	78.0	.05
Advanced Art	67.3	92.3	.05
Business Education			
General Business	74.4	82.8	
Typing	99.7	98.5	
Word Processing	57.2	81.0	.05
Accounting	94.9	96.8	
Business Math	72.5	77.7	
Business Law	49.7	75.5	.05
Business Machines	78.8	84.5	
Data Processing	41.7	78.1	.05
Bookkeeping	86.8	88.0	
Business Communications	42.8	57.1	
Advertising	10.8	33.3	.05
Computer Science			
Computer Literacy	80.3	82.8	
Computer Programming	75.2	91.2	
Foreign Language			
Spanish	64.1	97.6	.05
French	32.2	94.4	.05
German	17.0	69.2	.05
Russian	0.3	7.6	.05
Latin	4.3	49.5	.05
English-Second Language	12.2	55.5	.05

Course	Percent Offered Small Schools	Large Schools	Significance
Home Economics			
Family Relations	93.9	86.5	
Child Development	92.7	89.2	
Food and Nutrition	97.8	95.3	
Clothing Construction	96.2	92.9	
Interior Design	65.3	61.3	
Consumer Education	85.6	77.4	
Home Nursing	24.2	26.5	
Industrial Education			
General Shop	83.5	70.0	
Drafting	76.9	92.2	
Metal Working	66.4	78.8	
Welding	80.6	73.6	
Home Construction	50.7	51.9	
Automotive Mechanics	57.7	80.4	.05
Small Engine Repair	67.9	65.5	
Autobody Repair	23.8	48.6	.05
Language Arts			
Basic English	97.8	97.0	
English Grammar	99.7	97.9	
Composition	99.1	98.2	
Creative Writing	81.8	92.3	
American Literature	98.1	97.9	
World Literature	72.1	86.4	
Speech	76.5	88.2	
Drama (Theatre Arts	57.2	90.0	.05
Remedial Reading	75.5	93.8	
Journalism	67.0	89.6	
Mathematics			
General Math	96.8	97.0	
Algebra	99.7	99.7	
Advanced Algebra	95.6	98.8	
Geometry	98.1	99.5	
Advanced Geometry	37.2	79.0	.05
Trigonometry	88.2	96.7	
Calculus	55.6	90.2	.05
Probability/Statistics	21.6	44.3	.05
Consumer Math	80.7	84.8	
Computer Math	42.3	76.8	.05

Course	Percent Offered Small Schools	Large Schools	Significance
Personal Development			
Body Conditioning/ Weight Lifting	64.2	82.6	
Health	93.3	91.9	
Aerobics	30.2	55.1	.05
Sex Education	59.6	70.5	
Dating and Courtship	38.8	42.5	
Health Occupations	35.2	54.6	.05
Driver Education	92.7	89.5	
Science			
General Science	87.1	81.7	
Life Science	75.9	76.8	
Biology	99.7	98.8	
Genetics	38.8	48.0	
Physical Science	89.0	89.9	
Chemistry	96.8	98.8	
Physics	89.7	98.2	
Earth Science	69.4	74.1	
Astronomy	16.8	29.4	
Geology	16.6	32.3	.05
Social Sciences			
State History and Government	82.5	82.3	
U.S. History	99.4	99.1	
U.S. Government	95.5	95.8	
World Goverment	46.7	58.7	
General Economics	52.8	81.9	.05
Consumer Economics	60.1	71.7	
Current Events	68.5	57.8	
Geography	76.1	72.1	
Sociology	52.6	80.7	.05
Philosophy	5.4	19.8	.05
Psychology	56.3	83.0	.05
World Cultures	43.0	67.5	.05
Anthropology	5.4	28.5	.05
Ethnic History	11.1	27.9	.05

Course	Percent Offered Small Schools	Large Schools	Significance
Special Programs			
Military ROTC	1.7	28.7	.05
Advanced Placement Biology	24.5	52.2	.05
Advanced Placement Chemistry	13.7	48.6	.05
Advanced Placement English	29.4	69.4	.05
Advanced Placement History	8.6	55.9	.05
Advanced Placement Math	23.5	62.5	.05
Advanced Placement Physics	3.5	31.9	.05

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health occupations); only one Science course (geology); six courses in the Social Sciences (economics, sociology, philosophy, world cultures, psychology, anthropology, and ethnic history); and all advanced placement courses, as well as military ROTC.

Conclusion

How broad is the disparity in course offerings between small and large high schools? Findings from this study indicate that of 104 courses surveyed, 37 (35.6 percent) were offered at significantly higher frequencies in large schools with a mean student enrollment of almost 1600; whereas, only two classes (1.9 percent) were offered at significantly higher frequencies in small schools with an average enrollment of about 300 students.

Small high schools share many of the problems that beset education in general; inadequate finances, shortage of teachers, changing social values, pressure from special interest groups, etc. The fact is, however, that many of these problems are magnified in the small secondary school. This is particularly true in terms of providing the many and varied educational needs as determined by students, parents, community, and the state. Low student enrollments increase per pupil cost of professional staff, facilities and programs. Small numbers of students limit critically the number of classes that can be provided. In turn, small numbers of certified staff limit the number of classes in which the teacher can supply subject matter expertise. It is not unusual for secondary teachers in small/rural schools to teach three to five different subjects each day (Barker and Muse, 1983).

Despite these concerns, recent research suggests that smaller schools--provided they offer diversity in ther curricula--may be one of the most important strategies for educational improvement in the 1980's and beyond (Dollar, 1983).

Due to their smaller size, such schools offer the best opportunity to create a school climate conducive to teaching and learning. The challenge of maintaining the benefits of smallness, while at the same time providing diversity in program offering, perhaps is one that needs more attention. For the present, however, it appears that most students attending small/rural high schools face curriculum disadvantages uncommon to students who attend larger high schools.

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